

BUG-HUNTING

SPECIALLY ROUND ABOUT WINCHESTER.

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PREFACE.

I FEEL it advisable at the outset to utter a humble word or two, in the hopes of propitiating those great deities, the Captains of Lords and Football, and the senior Prefects of the various Houses, whose persons indeed change, but whose offices and attributes remain and are immutable. And the particular attribute before which I prostrate myself is the suspicion with which they regard Bughunting, considering it a dangerous pastime and liable to sap the foundations of all true manhood. Therefore let me say at once that I know my place, and that I only try to entice over to my side the duffers—the crocks—the hopeless specimens, who have no eye for a barter to leg or a straight flyer and who never will have. It is indeed truth that I have numbered members of Lords among my adherents, but alas! they have soon begun to shew traces of subtle cricketing diseases, such as playing wild on the off side and bowling left-handed, though they were described in Calendars, etc., as fast right. These diseases are sown or ingrafted by Bughunting. Where the Prefects come in I have not yet discovered—on general principles I suppose. I never did know how to assault a general principle. Therefore I bow down and cry, let me have my crocks, my loafers, my lovers of penny tarts before lunch, my lunatics. I will even confess that Bughunting is the cause of all these errors, if I may thus secure toleration. Though I may exclaim as I leave the august presence, “But it does move, for all that.”

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APPLIANCES.

THE beginner—that much abused being in all treatises—purchases a net, a Cyanide bottle, one or perhaps two setting boards, some things called pins, but which rather resemble aboriginal spears, a collecting box and a store box, and is happy. I do not wish to quarrel with any of his paraphernalia, excepting only those awful implements sold as “mixed pins of various sizes.” But I do wish to point out, in as short and practical a way as possible, certain errors in the use of these various implements.

I. *The Net*.—This will be of stiff green stuff and either on a long light stick or on a short heavy one. Put the green stuff over night into your jug and take out the stiffness, so that it will fold over lightly with a turn of the wrist and evenly along the cane. Some moths (experto credite,) are very clever at running out like a mouse along any groove in the stuff. Also the stiff material rubs off the scales. Use a *short light* stick, length and weight are hopelessly against netting quick flying insects on the wing, which is one of the joys of the skilful netter. I may mention without boastfulness that I took eight Sibylla on the wing one afternoon at Lyndhurst, while my companion stalked one, which he never got, because he dare not trust his rather unwieldy implement. Many other insects, besides Sibylla, enter thoroughly into the stalking game and refuse to settle.

II. *The Cyanide Bottle*.—Many collectors never use this, but unless you can carry a great number of pill boxes, it is almost necessary. Besides, pill boxes sometimes open in the pocket, particularly those that contain the best insects. *But*, remember that the cyanide bottle first stupefies and

then kills; and if it kills it *stiffens*. So you are on the horns of a dilemma, if you do not stiffen your insects they come to life in the box, and if you do stiffen them they will not set. Oh! you little rascals of both classes! How you have moved my wrath! Some of you with boxes of flapping insects, beating themselves to pieces. ("You can't talk about humanity to a Bughunter", men say); and others, striving to set stiff insects and calmly tearing long gashes in the beautiful wings that will not come down into the right place. Till at last the temper gives way and the spoiled beauty is cast into the fire, or else the wings are crammed down anyhow, and something called a specimen is eventually produced. Also, you latter class, you carry in your pockets a bottle full of insects all day, jolting about, generally inside out, till the warm moist bottle is coated with scales and the wings are almost colourless, and then you expect me to name your specimens. Before trying to rescue you, let me, for your comfort, say that even in maturer years I have behaved to my insects in each of these two ways. And I am mainly writing this to get you through the two stages quickly.

Let me give you one truth to digest, "It is no use being in a great hurry and getting fidgety, when you are dealing with insects." Never mind if your neighbours are catching some that you might have a chance of. Get the one in your net comfortably settled before you think of another. Bottle him till he is stupefied—not longer (specially geometers). Wipe the palm of your left hand. Turn him out on his back on your left hand. *Cork your bottle*, or it will lose its strength. Pin him through the legs to the back. Blow the wings upright over his back, holding the pin in your right hand. Take him delicately under the wings with the finger and thumb of your left hand. Withdraw the pin and insert it again sideways *through the body* under both wings, and pin him sideways, *i.e.*, on his side, in your collecting box, so that the underside of his wings rests on the paper. Now I am supposing you to be provided with a little pocket penholder, which shuts up so as to protect the nib, and with a little glass stoppered bottle of solution of oxalic acid. Take a little of this on the nib

and stab the insect in front of the forelegs (the most vital spot), hold the nib there for two seconds, to let the poison sink in, (longer in the case of Noctuae), and then your insect will never come to life again and in its sideway position will take up very little room in your box. Nor will it have stiffened by the time that you come home from an ordinary walk—say to Ampfield. In the case of Lyndhurst expeditions, where the insects have to be kept till the next morning or afternoon, push the pins far enough through to keep the wings clear of the paper, and pin them, when you come home, in an ordinary relaxing box, with the cork very slightly damped, and they will keep beautifully.

All this takes time, and it is not easy to take time, when you see others catching what might be your insects, or on a hot day when two or three flies are promenading about your face. The remedy is in the first case to go by yourself (I believe in the solitary entomologist) and in the second case to keep calm, and take it out of the flies, if possible, afterwards. It is really worth the trouble.

III. *Setting boards*.—Two are quite inadequate. You must cut off the strawberries or jam tarts or ices and get more. You cannot make a *Eupithecia* presentable on a board big enough for *Atropos*, nor *vice versa*. You must at least have one big enough for the hawk moths, which will also do for the big butterflies like *Atalanta*. One for large Noctuae like *Aprilina*. One with a smaller groove for the large Geometers like *Repandata*, which will also do for the smaller Noctuae. One for the middle sized Geometers and one for the *Acidaliae* and *Eupitheciae*. That is the smallest allowance I can give you, if you want to make your specimens presentable. And the more you have, the better. Also I advise you in the winter to take off all the paper with coarse sandpaper, and then to make the cork as smooth as silk with fine sandpaper. The pin pricks, in the white paper, prevent a delicate wing from coming into place. Often the grooves require to be deepened. More specimens are spoiled by shallow grooves than in any other way, as I shall shew, when I come to talk of setting.

IV. *Pins*.—Do not buy mixed abominations. The colour is a matter of taste. I prefer black ones. They do not

seem to turn green, but are liable to curl up at the point. If you cannot get what you want from a local dealer in small quantities, the obvious thing is for two or three to club together (for they are expensive) and get half-ounce boxes of various sizes from Watkins and Doncaster, or any of the great London dealers. The best sizes are 2, 4, 6, 8, 10. You will not want many of 2 and 4, but must have some. Use your own taste as to size, but err on the side of smallness. And keep your sizes separate, so that you can get your pin at once.

As to boxes, I have no special advice to offer. But keep them clean and put Naphthaline in a little bag in the corner of your store boxes. Do not be in a hurry to bully your friends and relations into getting a cabinet for you. It is rather a white elephant.

Even the daintiest fingered man must have a pair of forceps to pick up his pins with.

BREEDING.

It was in view of this chapter that I burned the incense of humility to the great deities. Many are the difficulties with which the bug hunter has to contend, but in no branch are they so hopeless as in breeding. "Why don't you breed it," I say to some luckless victim, who produces a ragged series or single specimen of *Bidendata*, with some triumph, as the result of his hunting. "Oh sir! our house brocks bugs" is the answer that generally meets me. I used to reply hopefully that I would see the House master. But I have learned since that to that answer there is no reply. I used to be vexed that there was no redress, but since I learnt that it meant keeping the larvae among books and other odds and ends, and that they frequently escaped and were found crawling over a prefect's sacred trousers and in other places hallowed by notices to trespassers—well! I do not altogether wonder that "Our House brocks bugs." But the difficulty remains. Of course, when everything becomes perfect in this world, we shall have a nice little public garden,

where trees and plants sacred to larvae grow and flourish, and wherein there is a nice light well ventilated shed sort of arrangement and plenty of big twelve-inch flower pots and lots of sand and string and muslin and pairs of scissors. (That sounds rather like Snark Hunting.) Therein shall all bug hunters meet after breakfast, myself among the number, and all the sacred animals shall be fed and cleaned and made happy. We shall breed great series in those days. But Utopia is still in the clouds. Sleeving is impossible, except a man have a garden of his own and be willing to decorate his trees with muslin bags. But sleeving mainly saves trouble, and is not an essential. What larvae want is—(1) Fresh food; (2) Fresh air; (3) Light; (4) Means to pupate, naturally and in comfort. The question is “cannot these essentials be secured, without disturbing the serene abodes of the gods?” I think they can with care and discretion and trouble and some sacrifices of jam tarts (not as burnt-offerings to the gods). If you cannot coax big flower pots out of anybody—do not try me—cut off the tarts and buy them. You can do a lot by that most unpleasant method. Also coax out of somebody, or buy, some strong muslin or buttercloth to tie over the aforementioned pots. Put some broken fragments at the bottom to drain well, and then two or three inches of sand or light soil, without worms or beetles. There is an admirable home—better than all the breeding cages. All that remains is to get a resting place. I can offer no suggestions here. You must make your own selection and use what prayers may avail. Avoid the feet of the careless or mischievous; be in the open air—they like rain—beware of ants and beetles. With those hints as to situation, I must leave you to your own ingenuity. But having got your situation, *do* feed every day. Mind you do not throw away larvae or pupae on the old stuff and do not dig up your pupae to see how they are getting on, you can put others into the same pot, when the first lot has gone down. Do not overcrowd your pots with larvae. Learn what the larvae of *Satellitina* and *Trapezina* look like, from someone else’s experiences of their cannibalistic propensities, if possible. And do not think it necessary to kill everything that comes out, when you have got your series of them.

The subject is not quite exhausted. Many of my friends say "It's too much bother." I have no answer to that, unless it be "Go to the ant." Others say "That's no fun—I like a good run for my bug." That has reason. So do I—but from my collections point of view, I very often let him go after the run and breed two or three, so as to have perfect specimens. There are two points I want to lay stress upon.

1. I do not want my collection to be mere trophies of the chase. Have your run, if you like, but do have specimens as near perfect as possible. I have never seen the insect yet taken on the wing, that looked as beautiful as the bred ones.

2. Do not be *mere collectors*. The value of the study, apart from the open air and exercise, consists mainly in watching and comparing the life histories of the various insects.

I shall have another word or two to say on this point in its proper place.

Meanwhile let me just express a hope, that those who find that they can breed, will try to breed right through from the egg. It vexes me a good deal to find a dead female, in some friend's box, of a species which I am longing to breed, but have not the luck to catch the hen to lay the eggs. Try to take the trouble to learn what a female looks like. The most obvious differences are size of body and fineness of antennae. Some differ in colour and markings. They will generally lay readily in an ordinary chip box, and often do not spoil themselves. Now and then one has cruel disappointments, when a valuable insect spoils itself and does not lay. I am still smarting from one or two such. Never mind. Do not be beaten. When your ova hatch, put the young larvae into a small bottle with plenty of food plant. Empty killing bottles are not bad, when they have grown a little, but you want something smaller, but wide in the neck, at first. Your main difficulties will be—(1) changing the food; (2) preventing the bottle getting wet on the side, and the young larvae being practically drowned. Change the food every day. Pull the pieces out, one by one, with your forceps and tap them gently over a piece of white paper, then put your fresh food in and brush the young

larvae back with a camel's-hair brush, and tie a bit of fine muslin over the top. The second difficulty is harder to meet. Try to get the food as dry as possible and keep cool, so as to avoid evaporation, and put lots of food in the bottle so that they can have a straw to cling to. Young larvae always want to see the world and will wander very wide, if you give them room. When they grow, as they very soon will, you will have to change them to a larger bottle, after that they will be ready for the flower pot. Mind that the muslin over your first bottle is fine enough to keep them in.

In conclusion, let me ask anyone who finds a rare female, not to kill her, but even if he cannot breed himself, to bring her to me, and I will give him half of the progeny, if I succeed, and if I fail will make restitution out of my own collection.

SETTING.

LEND me your longest ears, my friends, for this is most important. It is no good to have netted with consummate skill, or to have bred with patient toil a lovely beast, if you are then going to spoil it.

1. Let your corpse be a corpse and not a stupefied being, and let it be a nice corpse—a flexible corpse. You will do no good with a stiff insect.

2. Pin it through the middle of the thorax—rather to the front—so that the pin is equidistant from either wing.

3. Let the pin pass through, so that it emerges between the last pair of legs: again equidistant from the two wings. You can never set an insect which is pinned crooked, *i.e.*, not at right angles to the plane of the wings.

4. Pin it on to the setting board, so that the pin is at right angles absolutely to the board. When you look along a full board, there should appear to be only one pin. The one nearest your eye should cover all the rest. If you do not observe this rule, the wings on one side will have to be forced down on to the board and the board will force the other pair up. And the result will not be beautiful.

5. Press the pin in so far that the bases of the wings are

exactly level with the surface of the cork. This is why it is of vital importance to have a deep enough groove. If the groove is shallow, the wings will have to be forced down on to the cork and will have an angle in them when stiff. If again the body is too deep in the groove the wings will stick upwards, and again, when set, will have an angle in the opposite direction.

6. When your insect is fairly pinned straight and level on the board, straighten out the antennae with a fine needle and pin them, with a long pin behind each, in their place. Then, if possible, lift the two fore legs on to the cork, and if needs be, pin them, so that they shew one on each side.

7. Now for the wings. Cut a little square of cork about as big as a large pea. Push a strong pin through at right angles, so that the point of the pin shall come fairly through the broadest, smoothest side. In this lower side cut the tiniest of nicks. Take a smooth bristle out of a clothes brush, about an inch and a half long, or a fine needle—(you will really want one or two of both—for the bristle is not strong enough for some wings and the needle is too coarse for others). Lay your bristle in the nick and fasten it in with a touch of sealing wax, which must be quite smooth, and level with the surface of the cork. Then if you take your strong pin by the head and stick it into the cork of your setting board, straight, the bristle or needle ought to lie along the cork of the setting board. With this implement and a steady hand, you must now depress the two wings together on one side, so that they are held smooth and level upon the cork of the setting board by the bristle or needle, the strong pin of your implement being fastened in the cork of the setting board, so that your hands are free. The bristle must be tight enough upon the wings to hold them in any position, and yet loose enough to let them slip upwards along the cork of the setting board when gently pushed in that direction. You will very soon find the right place. Now with a loose bristle or fine needle, push up the fore wing as high as your taste suggests. Try not to puncture the wing—but sometimes it is inevitable—and then take the under wing up into what looks its natural place. Take it up far enough. Do not put on any braces until you have

done the other side (so that you will want two little setting tools at all events). When you have got the two sides quite symmetrical, then you may secure the wings with strips of paper or little triangles of calling-card. Mind you cover any corners likely to curl up. Then withdraw your two little setting tools. Do not be afraid of pushing up the wing while the needle or bristle is bearing on it. The smooth surface will not take off any scales, unless it presses too tight. You will soon find what will just hold the wing. The great advantages of the method are that you have both hands free and that you can see both sides at once, unobscured by braces. It sounds rather long, but you will soon learn to do it quickly and accurately. Put your boards away in a dry place, where mice and wasps cannot get at them. And do not be in a hurry to take the insects off. A week is the smallest allowance, even for small insects. The body ought to be quite hard and stiff. This is one reason for having many setting boards. If you run short, you hurry some insects off and then the wings give way after a month or so. When the time comes remove the braces, one at a time, very carefully and the pins that fix the antennae with all the care and steadiness at your disposal. It is a great pity to spoil a perfect insect at the last moment by carelessly flicking off one of its antennae with a slip of a pin, as I have done, not once only. Remove from the empty board any fragments of a leg etc., which will breed mites, and give it a rub down with fine sand paper.

BEATING.

HAVING now delivered myself of my theories as to the preparation of specimens, I must trouble you with a little advice as to the getting of them.

Of netting and breeding from the egg, I have already spoken. Of sugaring and light and blossoms, enough has been already said elsewhere. Besides, men at school cannot get out in the evening.

The great remaining method is beating for larvae, and it is not practised nearly enough. Partly because you think

breeding a trouble and partly because you do not know the larvae when you get them. And also there is a touch of the feminine dislike of "crawlies."

Now if you will be persuaded, you may get the larvae, close to Winchester, in some numbers, of many insects which you barely know by name, or possess perhaps to the extent of one ragged but treasured specimen. All you want is a couple of empty cocoa tins, or some equivalent, an umbrella and a strong stick. Perhaps I ought to add patience and hard hands. Of course it is no good to beat for a larva, when it is in the pupa stage or otherwise engaged. So that you must get from books or from me some preliminary knowledge. The two essentials are, whether the larva is likely to be about and on what it feeds. Any book will tell you that. I strongly advise you to go for special things. Promiscuous knocking about is geuerally unprofitable. For example,—Do you know Buckthorn? If not come with me some day and I will shew you. If you go to that in Blackberry lane or elsewhere and beat in May, you are pretty sure to beat a nice shew of *Rhamnata* larvae. There is plenty of time after lunch any day. When you have more time go further afield for other things. I need not go more into detail. Only remember to hold your umbrella under all the branch which you are beating and to beat in the direction of your umbrella. I watched a man one day beating sideways and jerking a small shower of larvae a yard to the left of his umbrella. He said he did not think much of beating until I made him pick up some of his larvae, which were rather good ones.

It is better to take a bush, if possible, branch by branch and if you find larvae, stick to that bush. The female has been laying there. For this reason detached bushes are the best. Again as to the further choice of bushes. A friend was beating with me one day, and said "Why do you get so many more larvae than I do?" I thought at first that perhaps I was working more carefully, but I do not think I was. I watched his procedure and noticed that he went for the nice clean smart looking bushes. One is very liable to think, "There's a beautiful bush," when it has lots of leaves on. But think a moment. Larvae eat leaves. Now when

you go out, make for the dirty looking bushes, all nibbled about, for there are the larvae. Also it seems to me that moths prefer to lay their eggs on the dirty looking little stunted bushes. Again you must be very careful to observe the habits of larvae, *e.g.*, at Lyndhurst rather a valuable larva—*Orbicularia*—feeds on the low trailing branches of the willows, down by your feet, and drops at a touch, so you may very well miss them, if you are intent on the upper branches and kick the lower ones meanwhile with your feet. I have never, to my knowledge, taken one any height up a bush. One generally finds out these details by accident. Always be on the look out for them. Many larvae on the oaks for instance, never get far from the trunk, and prefer the little scrubby trunk shoots to the beautiful clean and leafy branches. But I am not going to tell you everything. You must find out some things for yourselves. I have said that solitary entomology is best. I think it better to beat in pairs and for two reasons. Firstly, it is tiring work and it is good to be relieved after an hour or so. Secondly, while beating, many geometrids fly out and should be caught. Therefore let one take a net and another an umbrella and take it in turns to beat and net. But take a companion you love, for at the end there must be a fair division of spoil, and odd numbers or odd specimens, varieties etc., must be settled by the longest grass, if coins are wanting wherewith to toss for choice. Only remember that solitary beating is better than thinking that you have been trying to score off your friend.

ODDS AND ENDS.

1. DIG, of course, with a trowel for pupae. Specially in September and early October. Oaks, elms, limes, and poplars are the best trees. Do it carefully; it is hard work, and the smaller pupae hide themselves among the earth. Do not dig with the trowel pointing towards the trunk, but let your direction be parallel to the line of the trunk—you are less liable to cut the pupae thus. Put back the earth when you have got your pupae. Do not bury them again. Carry

them home in moss or cotton-wool, and lay them on the *surface* of the earth in a flower pot. Give them a drop of water now and then, except in very cold weather, and wash them clean of earth after digging them up. If you keep them in a warm room indoors, you ought to water them at least every other day.

2. If you have nothing better to do, after digging is over, pull the moss off the tree trunks carefully, and search among it for cocoons and pupae. It is rather tedious work, but what you do get will be probably good, *e.g.*, *Ridens Rubricollis* etc. at Lyndhurst. And *Ligustri* on the ash trees. Also pull off the trails of ivy. Some larvae spin among the roots of them.

3. Some things almost *have* to be found by hard searching with the naked, very naked, eye. An eye is always worth cultivating—for it can be cultivated. In the first place always have a look on the shady side of tree trunks, palings etc., for insects at rest. I suppose I have taken more things about here in this way than any other. Gunner's Hole; New Field; various houses all have lovely palings. There are beauties at the top of Blackberry lane. Look on these as a matter of course, on the way down to Morning Lines, on the way up, after breakfast, whenever you go past them. Never pass a paling or a tree trunk without at least a glance. Try to be first over them in a morning, but never mind if you are not. I have taken some of my best things walking behind another man. If there are several men, let the jealous ones go first. They will keep racing past one another, and leave most of the things for you.

Again various pupae and larvae must be found by eyesight. For example, *Furcula* in the pupae stage pupates on the *dead* wood of the willows, in October. Look first on any dead wood in the tree, then on any dead wood littered about under the tree. It is a singularly hard cocoon to find, as it is so like the bark, but it is generally just below a divergent branch, smoothing off the angle, but sometimes on the straight—specially where there is lichen, which must be rubbed off. Of course the larva may be beaten, but sometimes one is prevented from beating by one thing or another. I generally find a few pupae in the autumn round and about Crabbe Wood.

Some larvae cling too tight to be beaten off and some feed too low. One example of each must suffice. *Asellus* feeds in September on the beech trees at Lyndhurst, and possibly, if not probably, at Crabbe Wood—a little slug-like brown larva. The secret of finding it is to look for the eaten leaves. They look as if they had been cut with a chisel between the ribs. The larva almost exactly mimics the brown spots on the leaves.

Quercifolia feeds towards the end of May on the blackthorn. I have taken it on hills, in Blackberry lane and everywhere about here where there is blackthorn. It is generally on the main stem of the smaller bushes close to the bottom, among all the grass, which must be pushed aside. It is large and somewhat conspicuous, though very like the bark of the shrub. Where there is one, there are often two or three.

This chapter might be increased largely, if one had the special knowledge. There are many larvae which one never finds, probably because they are night feeders. But night feeders must go somewhere in the day. May I ask all to try to find out where, and so do entomology a valuable service. By the way, *Upsilon* goes under the loose bark of the willows in June, among the wood-lice and earwigs.

“BUT IT DOES MOVE, FOR ALL THAT.”

I CANNOT bring my pleasant task to a close without a word specially to you, my many companions past, present, and may I hope, future, you who have charmed and worried, but never bored me, with whom singly or in batches, I have wandered round our pleasant lanes festooned with clematis and other edibles, who have thronged about me at somewhat early hours to catch the train to Lyndhurst, have waited with me at Bishopstoke, and so onwards, a riotous cause of anxiety, but never tedium, past the mist clad Solent, and down among the grand beeches. You who have worried the stout landlady at the hotel for “squished flies,” (she knows what they are now) who have rolled among the heather in

memory of merry Scotland, who have quitted for a while the pursuit of bugs, to pursue the casual pigs and donkeys, who have got bitten by adders and sent home sick and sorry, and who have bathed with me in that scanty stream, wherein we lay almost head to heel, yards of happy Wykehamists, and got dry by evaporation, helped out by pocket handkerchiefs. Have I called you grubbers of penny tarts? Cocks? Lunatics? Nay, this was but a burnt-offering to the Pagan Deities. Do not I also love the penny tart or ice at queer hours? Is not my off side play weak and my on side weaker? Do not I love to bowl a barter, to see how far the man can hit it? Am not I a bigger lunatic than you all? Come with me still and come back here to come with me. The comic porter at Totton or Eling is there no longer, but the sun still scatters the mists and shines on the sails, the little boys still bathe on the dirty shore, the "Lucy and Emma" is repainted, but has kept her name, the gulls are still on the mud, and the Cormorant often on his post, the giant beeches still unite the hospitable shade, the heather still blooms, the bogs are as deliciously wet and dirty as ever. You can wallow in the stream, ride on the roof of the bus, drink ginger beer in the garden, and vex the souls of many people. The larvae of Sibylla are still hard to find on the low trailing honeysuckle, and Sibylla herself still floats inimitable for grace and daintiness along those rides. She is no easier to catch, but a merry and agile prey. The Azaleas still bloom for those who know where they are, and Fuciformis is not yet extinct, in spite of your ardent efforts. My friends, many of you still find some of your happiest memories among many happy ones, stamped by Bughunting. Play cricket and attain many caps, if you can. But if not, go to Nature and learn to open your eyes to her beauties, and your ears to her melodies, and your hearts to her charm.
